

NAME: _____

UNIT 2 Quiz – Trigonometric functions

Expectation	Level Achieved:
B1 - Demonstrate an understanding of the meaning and application of radian measure	

Ensure to show all work to receive full marks!

1. Convert the following into radians

a) 225°

$$\frac{225\pi}{180}$$

$$\frac{5\pi}{4} \text{ rads}$$

b) 3°

$$\frac{3\pi}{180}$$

$$\frac{\pi}{60} \text{ rads}$$

2. Express the following angles in degrees.

a) 3.98 radians

$$3.98 \times \frac{180}{\pi}$$

$$\frac{716.4}{\pi} \times \frac{10}{10}$$

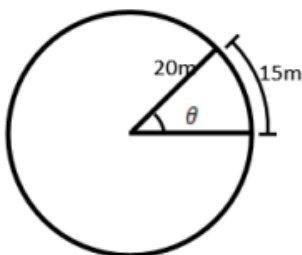
$$\frac{7164}{10\pi} = 228^\circ$$

b) 5π radians

$$5\pi \times \frac{180}{\pi}$$

$$= 900^\circ$$

3. An arc 15m long subtends a central angle of a circle with a radius of 20m . Determine the measure of the central angle in radians.



$$\theta = \frac{a}{r}$$

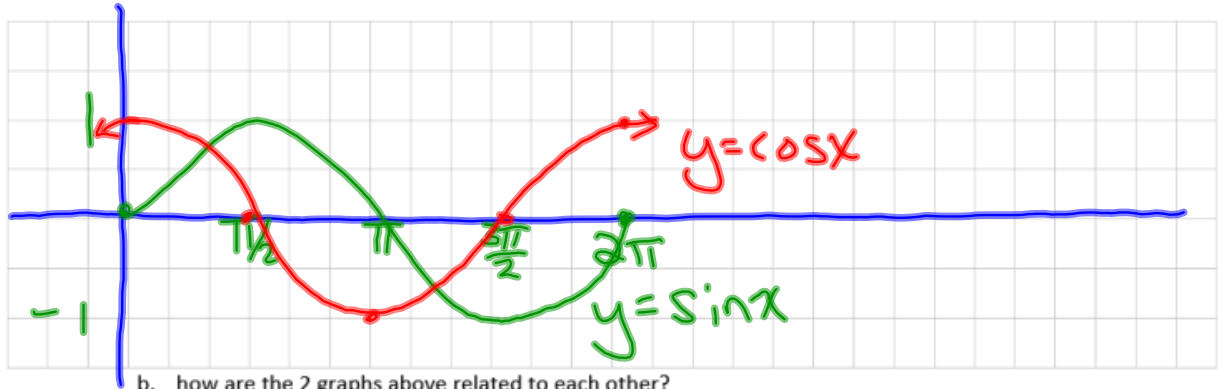
$$= \frac{15}{20}$$

$$= \frac{3}{4} \text{ rads}$$

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4.

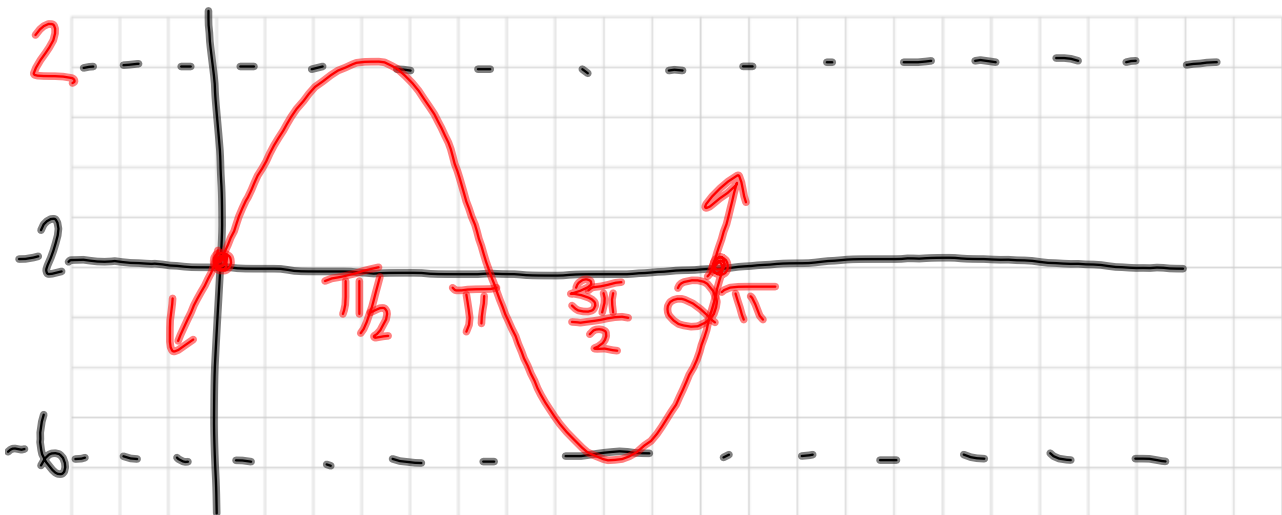
- a. Graph $y = \sin x$ and $y = \cos x$ on the same axes below. State all 5 key points. Be sure to label the graphs in radians.



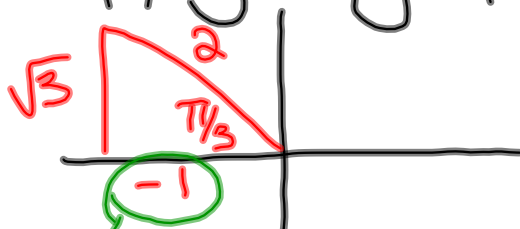
- b. how are the 2 graphs above related to each other?

- \sin is \cos shifted $\pi/2$ right
- max/min of 1 happens at zero of other
- Same period, amplitude, EoA

5. Graph $y = 4\sin x - 2$. State all 5 key points.



③ Apply my special triangles.



becomes negative
because the x-axis
is negative.

④ Write the ratio asked for
 $\therefore \sin \frac{2\pi}{3} = \frac{\sqrt{3}}{2}$

Try, continued.

⑥ $\sin^2\left(\frac{4\pi}{7}\right)$

⑦ $\sin x = -2$

⑧ $\cos x = -\frac{1}{2}$

⑨ $\sqrt{3}\cos x = -1$

⑩ $\sin^2 x + 5\sin x = -6$